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The Unfair Burdens Argument Against Carbon Pricing

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ABSTRACT *Carbon pricing is one of the most politically important approaches for the mitigation of climate change in the world today. Most political actors who are not committed to climate change denial favor carbon pricing, either as emissions trading or carbon taxation. In this article, I argue that carbon pricing should be considered unfair in most of its forms. I present a line of criticism called the* Unfair Burdens Argument. *It states that the most politically relevant ways to price carbon needlessly burden the less affluent more than the more affluent. This is unfair because, among other things, the more affluent have on average done more to create the problem of climate change in the first place. Principles for the fair distribution of burdens under climate change mitigation like the Polluter Pays Principle, which were thought to support carbon pricing, turn out to speak against it, when interpreted properly. Although the Unfair Burdens Argument on its own cannot show that carbon pricing is impermissible, it offers important clues for what a morally permissible form of climate change mitigation would look like.*

1. Introduction

Currently, forms of carbon pricing are the global frontrunners among policies aiming to mitigate climate change. Those parts of the political world that are not committed to outright climate change denial almost universally pull into this direction or at least indicate that if they were to lend their support to a robust form of climate change mitigation, carbon pricing would be their chosen means. Some of the most important climate policies to date have been forms of carbon pricing. Both the political and the scientific discourse of the last decade have been heavily marked by discussions about market-based measures like emissions trading and carbon taxation. The trend towards carbon pricing has been further consolidated by the decision of the Chinese government to implement a national system of carbon pricing in the form of emissions trading.[1] Once in full flow, it will cover roughly half of the Chinese economy, the largest source of greenhouse gases on the planet.[2]

Given its high political relevance, it is of special interest to gain a better understanding of carbon pricing. This article aims to contribute to this goal by raising and subsequently discussing one moral argument against carbon pricing that I name the *Unfair Burdens Argument*. It aims to show that the most politically relevant forms of carbon pricing should be considered unfair. They needlessly burden the less affluent more than the more affluent. This will turn out to be incompatible with plausible principles for the just distribution of burdens in climate change mitigation. The argument builds on the idea that 'being burdened', at least in the context of climate change mitigation,

should not be equated with 'being financially burdened'. Prominent principles for the distribution of burdens in climate change mitigation gain plausibility under such an understanding of what it means to be burdened.

The *Unfair Burdens Argument* begins with cases like the following:

> *Montgomery*: Montgomery is a very affluent person with a luxurious and very emissions intensive lifestyle. He has his own private jet, several sports cars, multiple mansions and is an avid consumer of all the things to his liking – and he boasts a massive bank account. The latter is somewhat burdened after a form of carbon pricing is introduced. Due to his way of living, he has to pay much more for his continued emissions than most people do. However, because of the depth of his financial assets, the payments do not compel him to make significant lifestyle changes. Emitting in larger quantities may have become a luxury, but he is the kind of person who can easily afford such luxuries.

Cases like that of Montgomery exemplify the observation that carbon pricing, at least in many of its forms, might not force everybody into behavioral change.[3] Since it only incentivizes behavioral change, there is the possibility that some people might resist the incentive by paying the price for their own personal business as usual. They continue to be 'environmental renegades', to borrow a term from Goodin.[4] This observation gives rise to a fairness-based argument against carbon pricing.

Three notable caveats: First, carbon pricing will be examined as a stand-alone policy tool in this article, not as part of a wider policy package. Since carbon pricing is by far the most prominent climate change mitigation policy tool, I take this to be a worthwhile endeavor, even though carbon pricing is in fact likely to be accompanied by other measures. Second, the approach to climate ethics used in this article is, in Simon Caney's terms, atomist and isolationist.[5] This is because I evaluate carbon pricing policies in the light of several well-known principles that only concern the distribution of responsibilities in solving a particular problem. Third, nonrevenue generating versions of carbon pricing, such as the free allocation of tradable emission permits, will be excluded from the discussion in this article. They merit discussion, but they are too different from revenue-generating models, that are in any case more politically relevant, to feature here.

2. Carbon Pricing – A Short Introduction

Before I present my argument, a short introduction into the idea and practice of carbon pricing is in order. Carbon pricing is an umbrella term for a variety of policy tools whose stated aim is to contribute to the mitigation of climate change. Their distinctive feature compared to other mitigation policies is that, at least on the level of the individual emitter, they incentivize emissions abatement rather than directly prescribe it. They do so by putting a price on the emission of greenhouse gases; or in shorthand: they put a price on carbon. Two general ways to price carbon have come to dominate the discussion: emissions trading and carbon taxation. They will be the topic of this article.

Emissions trading is arguably the more prominent of the two ways to price carbon. Prime examples are the European Union Emissions Trading System (EU ETS) and the Regional Greenhouse Gas Initiative (RGGI) in some US states.[6] The first step in setting up an emissions trading market usually consists in the specification of an emissions cap. In a second step, a number of emissions permits (usually one for every ton of CO_2e allowed under the cap) are created and allocated. The allocation typically happens in the form of an auction, generating revenue for the state. Finally, the permits are made tradable. Once the permit is used to cover the correspondent emission, it has to be surrendered. There are, of course, countless ways to tweak this basic system. The basic idea remains the same, though: a tight cap with a price on permits creates an incentive to emit less for all parties within the scope of the trading regime. Schemes like that are also called 'cap and trade'.[7]

Carbon taxation has also been implemented in some countries, although these projects can't rival the aforementioned emissions trading schemes in size.[8] Sweden is a prominent example of a country that has introduced a carbon tax. Here is how carbon taxation usually works: a central authority sets a fixed price per ton of carbon dioxide equivalent that has to be paid whenever said quantity of greenhouse gases is emitted. The payment takes the form of a tax. No fixed cap is created, although the tax rate usually can be understood to reflect a certain emissions target. All taxation schemes involve the generation of revenue for the state or whatever authority sets the tax. Since every emitted unit of greenhouse gas effects, a payment by the emitter, a clear incentive to emit less is created.

Carbon can be priced upstream or downstream under both emissions trading and carbon taxation. More upstream models would make fossil fuel extractors or industrial emitters pay the price on carbon. More downstream models would focus on retailers or the consumers themselves. Since all of these variants are expected to function in a way so that the tax incidence ultimately falls to the individual consumer, I will not further differentiate between them.[9] The versions of carbon pricing discussed in this article all generate revenue for the state. This will be important when discussing the revenue-generating function as one possible means to ensure a fair distribution of burdens in Section 4 of this article.

3. The Unfair Burdens Argument

The aim of this section is to provide a fairness-based argument against politically relevant forms of carbon pricing. The next section will feature a discussion of whether *all* forms of carbon pricing are subject to the same argument. I will provide the argument upfront and discuss its premises one after the other.

The *Unfair Burdens Argument* goes like this:

(1) More affluent individuals are burdened less under politically relevant forms of carbon pricing than less affluent individuals.
(2) If a carbon mitigation policy burdens more affluent individuals less than less affluent individuals, it is unfair.
(3) Therefore: politically relevant forms of carbon pricing are unfair. (1., 2.)

The argument is deductively valid. I will discuss its premises in the above-mentioned order. One qualification upfront: the *Unfair Burdens Argument* is an argument on real-world matters. It is under these real-world conditions alone that I take its premises to be true.

A note on which forms of carbon pricing are targeted by the argument is in order: I will work under the assumption that carbon pricing policies which make the more affluent pay vastly more per unit of emissions than the less affluent are unlikely to be implemented. They need therefore not be targeted by the *Unfair Burdens Argument*. I will elaborate on this matter in Section 4. I will further assume that carbon pricing policies that involve a uniform price per ton of CO_2e for all emitters belong to the category of politically relevant carbon pricing policies. For the remainder of this section, I will understand the argument as criticizing the forms of carbon pricing policies that involve a uniform price. Section 4 will explain how far the argument applies to policies with diverging prices for different emitters. Finally, the *Unfair Burdens Argument* targets only those policies that involve a price on carbon that is high enough to make a real difference for climate change mitigation. Less robust policies are nonstarters from a fairness perspective anyway.

3.1. Premise 1

The first premise states that more affluent individuals are burdened less under politically relevant forms of carbon pricing than less affluent individuals. The key concept used in premise 1 is obviously 'being burdened'. So what does it mean to be burdened by carbon pricing? One could think that somebody is burdened by carbon pricing if and only if (and to the degree that) she needs to make extra payments because of the policy. If that were the case, premise 1 would in all likelihood be false. However, interpreting 'being burdened' as 'being financially burdened' is not convincing. Remember the case of Montgomery. He pays substantial sums of money as a result of carbon pricing but can continue his luxurious and emission-intensive lifestyle. Can he rightfully be counted as being burdened by carbon pricing? One could answer that yes, maybe the payments he has to make should prevent us from saying that Montgomery isn't burdened at all. After all, we can assume that he would prefer to emit for free, just like he did before. But compare the case of Montgomery with the following one:

> *Homer:* Homer is neither poor nor very affluent. Like most people in industrialized countries he emits significant amounts of greenhouse gases, although not nearly as much as even more affluent people. The introduction of a carbon pricing scheme does not plunge him into existential danger, but he has to make substantial changes to his way of living in order not to become poor. For example, he has to scratch his annual holiday air travel and has to cut down on his car travels, which formed an important part of his daily life. Like most people in similar situations, he does not welcome those changes but experiences them as burdensome. He liked his old way of living, but simply can no longer afford it.

Homer makes substantially less payments as a result of carbon pricing than Montgomery. At the same time, I take it to be evident that we should consider him to be much more burdened by the policy. After all, Montgomery hardly notices the impact

of the policy on his way of living while Homer must make sacrifices. Hence interpreting 'being burdened' as 'being financially burdened' is not adequate.

Homer might not belong to the group of people most heavily burdened by carbon pricing. After all, we can easily picture examples of even less affluent people who are burdened by carbon pricing more heavily than Homer is. Think of someone who is no longer able to afford those emissions necessary to provide basic necessities like food and shelter. Henry Shue calls these emissions 'subsistence emissions'.[10] However, since it might be possible for a carbon pricing scheme to exempt the least affluent and some basic goods and services without endangering the overall effectiveness of the policy, I focus on the example of Homer as a contrast to Montgomery. He is neither very affluent nor among the least affluent. People like him must be burdened by carbon pricing for it to be effective.

With that out of the way, let us take a look at some more promising candidates for what it means to be burdened by carbon pricing. What should be our 'currency of justice'? Some candidates are apparent: loss of hedonic quality, diminished preference satisfaction, and a loss of (sets of) capabilities or functionings.[11] Instead of deciding on one of these conceptions, I am going to make an ecumenical argument: all of these plausible conceptions of what it means to be burdened by carbon pricing converge insofar as more affluent people will typically be considered to be less burdened by the forms of carbon pricing targeted by the *Unfair Burdens Argument* than less affluent people.

This correlation might be at its clearest if we assume the capabilities approach provides the correct understanding of what it means to be burdened. Less affluent people will likely be restricted in at least some of their capabilities or functionings as a result of carbon pricing.[12] For example, many less affluent people will have to cut down on their car travels as a result of robust carbon pricing until electric cars (powered by green energy) will be cheap and practical enough. Being able to use a car as a means of personal transportation is still of paramount importance for the social lives of many people outside urban centers. And to engage in various forms of social interaction is a part of one of the core capabilities according to Nussbaum.[13] More affluent people, on the other hand, will be able to substitute lifestyle changes with financial payments to a higher degree, thereby minimizing the loss of capabilities or functionings. The car travel case is just one example, but it can be generalized: less affluent people are forced into lesser lifestyle changes under carbon pricing and are therefore less likely to lose capabilities or functionings.[14] They are, therefore, less burdened according to the capabilities approach.

Estimating who will suffer greater hedonic losses or more substantially diminished preference satisfaction is naturally somewhat harder to do. This is because these currencies of justice have a less tangible connection to the observable characteristics of one's life. However, some points speak in favor of the less affluent being burdened more by carbon pricing according to these theories as well. First of all, the observation that less affluent people will typically be forced into less substantial lifestyle changes seems, once again, significant. *Ceteris paribus* we can expect those people to suffer more who will not be able to retain their way of living rather than those who can keep on going about their business as they did before. And since we can expect that people's lifestyle choices roughly reflect their preferences, forced lifestyle changes will tend to frustrate those preferences. True, forced monetary payments tend to frustrate

preferences as well. But the following seems roughly right: more and more substantial preferences are frustrated if you are forced to alter your way of living than when you need to make monetary payments but can go on living like before.

Second, even if the more affluent will need to change their behavior as well, they will usually have a greater selection of comparable substitutes open to them. Even if a more affluent person can no longer afford to drive her emissions-intensive sports car, she is more likely to be able to substitute it with an electric sports car. This change is unlikely to result in significant hedonic losses or diminished preference satisfaction, in any case less so than having to cut down on your driving altogether.

Third, and this applies to the hedonic understanding of burdens in particular, the emissions-intensive luxuries that more affluent people are likely to give up as a consequence of carbon pricing typically improve people's well-being to a lesser degree than the more basic goods, services, and activities that less affluent people may have to forsake. There is a well-known diminishing marginal utility to consumption that is likely to result in more affluent people being less burdened than less affluent people even if they can't substitute the goods, services, and activities they can no longer afford. What more affluent people lose therefore seems less important for a person's well-being than what less affluent people lose. To be clear, whether cutting down on these luxuries goes along with smaller hedonic losses than cutting down on more basic goods, services, and activities is not directly implied by the decreasing marginal utility of consumption. After all, the negative feeling of losing something (rather than not having something in the first place) might distort the relation. But the general relation still seems plausible. Having to sell your second car is a smaller loss than having to sell your first car. Going on holiday in the Mediterranean instead of the Maldives (if they still exist) is a smaller loss than not being able to afford a holiday at all instead of flying to the Mediterranean.

To sum up, I take there to be a strong case for the more affluent being burdened less by carbon pricing than the less affluent. The most plausible conceptions of what it means to be burdened all point in this direction.

It is important to note just how modest this thesis is. For the purposes of my argument, it suffices if there is a general positive correlation between 'being burdened less' and 'being more affluent'. Anything stronger, for example an 'if and only if (and to the degree that)'-relation, is not necessary, as will become clear in the discussion of premise 2. This means that I don't need to deny that there can and will be counterexamples to the correlation. Imagine a version of the Montgomery case in which even the loss of small, inconsequential sums of money is felt as very painful by him, maybe because he simply is a curmudgeon. Or a version of Homer in which the forced behavioral change makes him embrace his local community more and ultimately improves his social life. At least under some of the more plausible understandings of 'being burdened', this version of Montgomery must count as heavily burdened and Homer as lightly burdened or not burdened at all. As long as these are exceptions to the rule rather than the rule itself, the justification of premise 1 still stands.

3.2. Premise 2

Premise 2 states that carbon mitigation policies that burden the more affluent less than the less affluent are unfair. This is for two reasons: first, because burdening the more

affluent less than the less affluent stands in conflict with plausible moral principles for the distribution of burdens in the context of climate change mitigation and, second, because our intuitive verdict corroborates premise 2.

Plausible moral principles for the distribution of burdens in the context of climate change mitigation support premise 2. One of the most prominent ideas for the distribution of burdens under climate change mitigation is the idea that those who had a bigger share in creating a problem should bear bigger burdens in solving the problem than those who did less to create the problem. This line of thought is frequently expressed in the Polluter Pays Principle (PPP) and will turn out to support the truth of premise 2. I will first elaborate on why the PPP supports premise 2 before commenting on the Beneficiary Pays Principle (BPP) and the Ability to Pay Principle (APP), the PPP's chief rivals. There are good reasons to think that the rationales behind these two other principles support premise 2 as well. Since the PPP, BPP, and APP are by far the most prominent principles within the literature on who should play what part in mitigating climate change, I take premise 2 to be well-supported.

First, the PPP: did the more affluent have and do they continue to have a bigger share in causing climate change? An affirmative answer to this question is supported by the recent studies on carbon inequality by Oxfam and Chancel/Piketty. The authors' first major finding is that carbon emissions are distributed unevenly among the global population. They both have found what is called the 'ten-fifty relationship'. Ten percent of the global population is responsible for half of the global emissions.[15]

Who are those individuals that emit much more than the global average? The answer is: more affluent individuals. There is a strong correlation between 'being more affluent' and 'higher emissions'. While this correlation is, of course, not perfect, it is pointed out as significant by both Oxfam and Chancel/Piketty: the richest 10% of individuals are responsible for half the global emissions.[16] Hardly any historical data on emissions by individuals exist, but I don't see any reason to doubt the positive correlation between affluence and emissions held during the last couple of decades.[17]

Now, onto the normative part of premise 2: climate change mitigation will burden some individuals. While burden-free scenarios are imaginable, they are either non-starters from a fairness perspective or very unlikely to happen. Compensating burdens to the current generation by increased borrowing from future generations (who are themselves compensated by the reduction of the severity of climate change they will have to endure) belongs to the first category.[18] As John Broome points out, this is effectively a case of potential victims of climate change bribing potential culprits not to harm them.[19] Instant revolutions of low-carbon technologies or a scenario in which everyone is perfectly happy to change his or her behavior belong to the second category. Hence, people will have to change their behavior on a great scale and, as was argued in the discussion on premise 1, this will burden them.

Given that burdens will occur under climate change mitigation efforts such as carbon pricing, how should they be distributed? One very prominent idea is that the differing degrees of contribution to climate change should determine the distribution of burdens. The Polluter Pays Principle is the most frequent expression of this thought. In the words of Roser and Seidel:

> *Polluter Pays Principle (PPP)*: A distributive principle according to which agents should bear the burdens of addressing a problem in proportion to their contribution to causing the problem.[20]

What needs to be noted is that Roser and Seidel, and other authors who have written on the PPP in the context of climate change, may have had a different interpretation of 'burden' in mind than I do. Hence, they may not necessarily agree that contribution to climate change should play a role in the distribution of burdens as I understand the term. The term 'pays' in 'polluter pays' certainly suggests a different concept of burden that more closely aligns with monetary payments. However, as I argued, other conceptions of what it means to be burdened are more plausible. If the PPP should serve as a plausible principle for the distribution of burdens, we should understand it as employing these conceptions. If burdens need to be allocated, they should be allocated in a way so that the bigger contributors to the problem should bear bigger burdens than smaller contributors.[21] Those who have emitted more in the past (presumably after some initial date at which excusable ignorance could no longer be claimed) should bear bigger burdens. I therefore take it to be the case that a plausible understanding of the PPP supports premise 2.

That is not to say, however, that carbon pricing is the only kind of climate change mitigation policy that stands in conflict with the PPP. But finding that some forms of carbon pricing conflict with a plausible understanding of the PPP is of special interest. This is for several reasons: first, because carbon pricing has a high political relevance; second, because the conflict between carbon pricing and the distribution of burdens demanded by the PPP seems very substantial. It's not just that bigger contributors aren't burdened more. They are burdened less than smaller contributors under carbon pricing. The third reason is because the PPP is typically thought to support carbon pricing.[22] The *Unfair Burdens Argument* can consequently be understood as an attempt to show that carbon pricing is indeed in conflict with what was thought to be carbon pricing's moral foundation if we interpret the PPP in the way I have argued.

As far as I can see, there is no principled opposition to the idea that the degree of contribution to climate change should play a role in the distribution of burdens under climate change mitigation. Those authors that criticize the PPP as the *sole* principle on the distribution of burdens under climate change mitigation usually want to have it accompanied by other principles rather than abolished altogether.[23] For example, they point to the fact that a lot of emitters were excusably ignorant about the effects of their emissions until, say, the 1980s or even the early 1990s.[24] Or they point out that it would be too harsh to place substantial burdens on impoverished former high emitters.[25] None of these problems of the PPP are pertinent when discussing premise 2, though. More affluent people have emitted in large quantities long after they could no longer be excusably ignorant, and more affluent people are by definition not impoverished. The PPP is therefore a plausible principle for the distribution of burdens in the context of climate change mitigation, and it supports premise 2: even if it might not seem unfair that more affluent people are burdened less under carbon pricing than less affluent people, it certainly turns out to be unfair if we keep in mind that it was, by and large, the more affluent people who have contributed more to the problem of climate change.[26]

Now let us have a quick look at the most prominent alternatives to the PPP, the Beneficiary Pays Principle (BPP) and the Ability to Pay Principle (APP).[27] There are reasons to think they support premise 2 as well. First, the BPP: who are the people who have benefited the most from emitting substantial quantities of greenhouse gases? While the answer to this question clearly depends on what interpretation of 'to benefit' is chosen, it seems that 'more affluent people' is the correct answer under most plausible interpretations. Yet again, authors subscribing to the BPP might not necessarily share the understanding of 'being burdened' advocated for in this article, but the rationale behind the BPP is applicable and supports premise 2.

The APP is harder to assess. This is why I will discuss it in more detail. In its most general form, it states that those with a greater ability to bear burdens should bear bigger burdens than those with a smaller ability to bear burdens. What does it mean to have 'a greater ability to bear burdens'? If we measure burdens in monetary terms alone, the more affluent are usually understood to have a greater ability to be burdened (i.e. to pay). Because they have more of the resource we measure burdens in, they can more easily do with less than people who have less of the resource in the first place. Hence we should burden the more affluent more than the less affluent.

I argued in discussing premise 1 that we should measure burdens not in monetary terms, but according to one of the other more plausible currencies of justice (hedonic quality of life, preference satisfaction, capabilities or functionings). These currencies of justice, of course, can not only be used to determine whether (and to what degree) someone is burdened but also how well off that person is in general. Now, what does it mean to have a greater ability to bear burdens according to these currencies? I think the most plausible answer is: those who are better off according to the chosen currency of justice have a greater ability to bear burdens. Just as the rich have a greater ability to pay just because they have more money, people who are, for example, better off according to hedonism have a greater ability to bear the burden of a somewhat reduced quality of life simply because their current quality of life is so high.

The next question is: who will count as being better off according to the three currencies of justice named in this article? I argue that even under this wider understanding of 'being burdened' (compared with the monetary one) more affluent people will typically count as being better off than less affluent people. For example, more affluent people will usually have a wider set of capabilities or functionings and are thus better off according to the capabilities approach. Estimating who will typically count as being better off according to hedonism or a preference-based approach is harder to do. This is because one's quality of life understood in these terms is far more difficult to measure. However, research indicates that there is at least some correlation between rising affluence and being better off according to these metrics as well.[28] Once again, it is therefore the more affluent people who must be burdened more in order to distribute burdens fairly. Since this is not what politically relevant forms of carbon pricing do, the APP deems them unfair.

Why should we believe that the APP, combined with one of the three currencies of justice, is a plausible principle? Why should we burden the better off more than the worse off even if we abstract from questions of responsibility for climate change and the benefits received from past emissions? One possible underlying justification of the APP is prioritarian. There is a special moral relevance to keeping the burdens on the worse off small, and this special moral relevance justifies higher burdens for the better

off. This need not apply to every case, for example, when we can massively reduce the overall amount of burdens by burdening the worse off more, but it applies across a wide tableau of cases. I take it that such a mildly prioritarian position is of great plausibility. However, a less demanding form of the APP that merely demands that more affluent people are *not burdened less* than less affluent people will reach the same negative verdict on politically relevant forms of carbon pricing. This is because, as I argued in premise 1, these policies actually burden more affluent people *less* than less affluent people. Hence even if one thinks that burdens in climate change mitigation should be distributed equally, carbon pricing will turn out to be unfair in its politically relevant forms.[29]

Summing up, it can be said that the rationales behind the most prominent principles for the distribution of burdens under climate change mitigation all point in the direction of burdening the more affluent more (or at least not less) than the less affluent. Burdening them less would be unfair.[30]

This finding fits with our moral intuition. If, for example, we keep in mind that the vast majority of more affluent individuals bear a greater responsibility for the problem of climate change than less affluent individuals, any mitigation policy that burdens the more affluent less than the less affluent really seems unfair. Whether a policy can be considered fair if it burdens the more affluent *more* than the less affluent and makes no exceptions for affluent low emitters is a different question. But any policy that as a general rule correlates 'smaller burden in solving the problem' with 'greater contribution to the problem' must surely be considered unfair. Reflecting upon representative examples like those of Homer and Montgomery further corroborates this finding.

3.3. An Exception to Premise 2

There is one notable exception to the rule stated in premise 2. If no burdens are lifted from the less affluent by burdening the more affluent more, it may not be unfair to burden the more affluent less than the less affluent. One might argue that burdening the more affluent more than the less affluent is justified even in such a case because the more affluent ought to be punished for their high emissions during the last decades. That would be a much stronger premise than what I intend to state in premise 2; hence the inclusion of this exception. Since it weakens rather than strengthens premise 2 for which I have already argued, I see no need to provide further justification for it.

I argue that this exception is not pertinent to the case at hand. Reducing the burdens on less affluent individuals by burdening the more affluent more is possible under those carbon pricing schemes that burden the more affluent less than the less affluent. I think this should be uncontroversial. There simply is no plausible explanation why it should be the case that pricing schemes that burden the more affluent less than the less affluent lead to a maximum burden reduction for the less affluent. Bluntly speaking: making life easier for the rich than for the poor is not the best way to help the poor. If people like Montgomery were kept from emitting staggering amounts of greenhouse gases, that could – not must, but could – reduce the burdens less affluent people have to bear. While shifting burdens need not be a zero-sum game, that is, not every burden placed on more affluent people will automatically reduce a burden on less affluent people, there seems to be a general possibility to reduce the

burdens on less affluent people by burdening the more affluent more compared with the distribution of burdens under some forms of carbon pricing.

This concludes the discussion of the *Unfair Burdens Argument*. If its premises are plausible, it establishes the truth of the conclusion that some forms of carbon pricing are indeed unfair. They needlessly burden those people who have contributed the most to climate change during the last couple of decades, the more affluent, less than the less affluent. If we accept this line of argument, we must deem some of the most politically relevant forms of carbon pricing unfair. Is this enough to make them morally impermissible all things considered? I have not argued for this conclusion and will not do so. How unfair must a policy with the potential to successfully mitigate climate change be in order to be impermissible? That is a next-to-impossible question to answer.[31] I will therefore stop short of making an all-things-considered judgment on the permissibility of those forms of carbon pricing targeted by the argument.

4. Are All Forms of Carbon Pricing Subject to the Unfair Burdens Argument?

The *Unfair Burdens Argument* presented in the last section of this article aimed to show that some forms of carbon pricing are unfair. This naturally opens up the question whether some other forms of carbon pricing are not unfair, or at least not for the reasons given in the last section. What has been said so far is meant to apply to carbon pricing policies that involve a uniform price per unit of emissions for all emitters. Everybody pays the same sum for the same amount of CO_2e. Proposals like that have a high political relevance, but they are clearly not the only possible carbon pricing option. An obvious next step is to look at carbon pricing schemes that involve different prices on greenhouse gas emissions for different individuals.

There seem to be two different ways to implement varying carbon prices. First, one could make different individuals pay different amounts for a single unit of emission in the first place.[32] A second way of implementing different carbon prices for different individuals would be to make all people pay the same price on carbon upfront, but reimburse different individuals to different degrees later on. These reimbursements could come from the general national budget or more specifically from the revenue generated by the carbon pricing schemes themselves. Using at least some of the revenues from carbon pricing to ensure a fair distribution of burdens is a common proposal in the literature.[33]

Now that I have sketched out how carbon pricing could involve varying carbon prices, I will briefly argue for *three* theses. First, there are forms of carbon pricing involving different prices for different individuals that are not unfair in the same way that is pointed out by the *Unfair Burdens Argument*. There are indeed some possible forms of carbon pricing that burden the more affluent more than the less affluent and hence cannot be targeted by the version of the *Unfair Burdens Argument* presented in the last section.

For example, consider an extremely progressive carbon tax proposal that forces the most affluent to pay ten-thousand times more for the emission of a certain amount of greenhouse gases than, let's say, the least affluent 25%. The most affluent 1% pay \$100,000 per ton of CO_2e, and the least affluent 25% pay \$10. A very progressive distribution of tax burdens is chosen for those in between. If the distribution of financial

payments between more affluent and less affluent is skewed extremely enough in the direction of the more affluent, they will likely have to make more demanding changes to their way of living than less affluent people. Consequently, they will in all likelihood be considered to be burdened more heavily than less affluent people in the sense of 'burden' appropriate in the distribution of burdens in climate change mitigation. We can therefore conclude that there is no principled reason why carbon pricing schemes must always involve an unfair distribution of burdens.

Second, not all carbon pricing policies that involve a higher price per unit of emissions for the more affluent than for the less affluent involve a fair distribution of burdens. Some of them are still unfair in the way illustrated in the *Unfair Burdens Argument*, although typically not as unfair as carbon pricing policies that involve the same price per ton of CO_2e for all individuals. Take, for instance, a slightly progressive emissions trading scheme that makes the very affluent pay double the price per unit of emissions than the least affluent, with a progressive rise in prices for those in between. This might still result in more affluent people having to make smaller changes in behavior than less affluent people. As long as wealth is more unevenly distributed than financial burdens under carbon pricing, the more affluent will be burdened less. The fact that a pricing scheme can be considered progressive is therefore not a sufficient condition for it being fair.

Also, one simple way to assure a fair distribution of burdens is blocked: one cannot spare the less affluent from all burdens under carbon pricing. If only the more affluent have to change their behavior, they will surely be more burdened than the less affluent. Such a policy will, however, in all likelihood prove ineffective in mitigating climate change. Not everybody has to change their way of living for a mitigation policy to be successful, but exempting significant parts of society from having to make behavioral changes is a recipe for failure even if those parts of society emit *relatively* little greenhouse gases. This is troubling both for those policies that exempt the less affluent from having to pay the price on carbon in the first place and for those policies that offer a full (or near full) refund for less affluent individuals. Using some of the revenue from carbon pricing to refund less affluent people can play a role in a fair and effective carbon pricing scheme, but too-generous refunds might threaten its effectiveness if they allow too many individuals to keep on emitting like before.[34]

The third and final thesis is the least certain one. It states that more robust carbon pricing policies that are likely to be implemented in the future will distribute burdens in an unfair way. Predicting the future is a notoriously sketchy business, and there is little reason to believe that philosophers are better at it than other people, so this last thesis should be taken with more than just a grain of salt. The following seems plausible, though: carbon pricing policies that can be considered fair will make the very affluent give up their emissions-intensive lifestyle. The most affluent 1%, for example, would not be able to keep on emitting 300 tons of CO_2e per year for long under such a policy. Given the disproportionately high influence of very affluent people on policy decisions in today's political climate, one need not be a cynic to think that policies that basically outlaw what we consider a very luxurious lifestyle or at least involve massive transfers of wealth for the short-term continuation of such a lifestyle have little chance of being implemented.[35]

Another way of looking at it is this: by adjusting carbon pricing in a way that leads to less uneven incentives to change behavior, we essentially make it mimic other policy

proposals, especially carbon rationing, i.e. the allocation of nontradable emission permits. The original idea behind carbon pricing was to couple the opportunity to emit with the means for paying for these emissions. A policy with different carbon prices for different individuals decouples these two things again. Those political actors who liked the original idea behind carbon pricing are unlikely to support a version of carbon pricing that mimics carbon rationing and thereby abandons the original idea. So while the *Unfair Burdens Argument* is an argument that only criticizes *some* forms of carbon pricing (and does so for good reasons), one can add that all or at least most forms of carbon pricing that have a good chance of being implemented fall within those forms of carbon pricing targeted by the argument.

5. Conclusion

Greenhouse gas emissions must be reduced. That much should be clear. Carbon pricing aims to reduce them by making them more expensive. Doing so, it links the ability to continue with one's current emission-intensive lifestyle to the ability to pay for it. Under politically relevant forms of carbon pricing this leads to an unfair distribution of burdens. It does so by needlessly burdening those individuals who have contributed the most to climate change during the last couple of decades, the more affluent less than the less affluent. The argument builds on the idea that 'being burdened', at least in the context of climate change mitigation, should not be equated with 'being financially burdened'. While some other forms of carbon pricing cannot be said to distribute burdens in an unfair way, they seem to have a smaller chance of being implemented.

Where does this leave us? As I have already said, carbon pricing may not be morally impermissible all things considered even if the *Unfair Burdens Argument* succeeds. For example, if it is the only politically feasible way to avert the worst of climate change, we should arguably pursue it. Changing what is politically feasible is another option, but this may take time – time we are running out of. Also, if it is true that the more affluent will use their influence to block all climate policies that involve a fair distribution of burdens, this will apply to other climate policies as well. Hence it is unclear if significantly fairer climate change mitigation policies will turn out to be politically feasible. If they are not feasible, this essay must end on a pessimistic note. Carbon pricing is no exception to the rule that politically feasible climate change mitigation policies involve an unfair distribution of burdens.

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NOTES

1 Frank Jotzo; Valerie Karplus; Michael Grubb; Andreas Löschel; Karsten Neuhoff; Libo Wu and Fei Teng, 'China's emissions trading takes steps towards big ambitions', *Nature Climate Change*, 8 (2018): 260–271.

2 China is the biggest emitter in terms of absolute emissions. Per-capita emissions continue to be much higher in other countries. See Hannah Ritchie and Max Roser, 'CO_2 and other Greenhouse Gas Emissions', *OurWorldInData.org*, 2019, URL: https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions (last retrieved: 14/03/2020).

3 Page, building on the work of Sagoff, denies that cases like Montgomery's will be possible. Everybody will 'have to undertake significant behavioral changes' under a suitable carbon pricing scheme, he argues. However, Sagoff's original thesis was about the United States as a whole. Its truth, if it turns out to be true, is compatible with more affluent *individuals* not having to make behavioral changes or only relatively small ones. See Edward Page, 'Cashing in on climate change: Political theory and global emissions trading', *Critical Review of International Social and Political Philosophy*, 14, 2 (2011a): 267; Mark Sagoff, 'Controlling global climate: The debate over pollution trading', *Report from the Institute for Philosophy & Public Policy*, 19, 1 (1999): 5.

4 Robert E. Goodin, 'Selling environmental indulgences', *Kyklos*, 47, 4 (1994): 584. - The discussion of this phenomenon has occupied significant space within the still relatively sparse philosophical literature on carbon pricing. It was Robert Goodin and Michael J. Sandel who first raised the point in connection to a specific form of carbon pricing, namely emissions trading. It has since been discussed under the names 'Collective Sacrifice Argument', 'Solidarity Objection', and, most prominently, 'Civic Responsibility Argument' (always in relation to emissions trading). The *Unfair Burdens Argument* constitutes a new approach within this general strand of criticism. It will focus not on civic responsibilities but will argue in a more direct way for the conclusion that allowing some people to buy their way out of behavioral changes under carbon pricing is unfair. My argument might be compatible with an argument focusing on civic responsibilities but is independent from it. See Michael J. Sandel, *Public Philosophy: Essays on Morality in Politics* (Harvard: Harvard University Press, 2005), pp. 93–96; Goodin op. cit., 584; Simon Caney and Cameron Hepburn, 'carbon trading: unethical, unjust and ineffective?', *Royal Institute of Philosophy Supplement*, 69 (2011): 214; Edward Page, 'The ethics of emissions trading', *Wiley Interdisciplinary Reviews: Climate Change*, 4, 4 (2013): 236–238; Simon Caney, 'Markets, morality and climate change: What, if anything, is wrong with emissions trading?', *New Political Economy*, 15, 2 (2010a): 207; Jonathan Aldred, 'The ethics of emissions trading', *New Political Economy*, 17, 3 (2012): 350; Jo Dirix; Wouter Peeters & Sigrid Sterckx, 'Emissions trading ethics', *Ethics, Policy & Environment*, 19, 1 (2016): 70.

5 Simon Caney, 'Just Emissions', *Philosophy & Public Affairs*, 40, 4 (2012): 258–259. For a short answer to some of the possible objections to such an isolationist approach, see endnote 34.

6 For a historical overview of emission markets, see Raphael Calel, 'Carbon Markets: a Historical Overview', *Wiley Interdisciplinary Reviews: Climate Change*, 4, 2 (2013): 107–119.

7 'Credit-and-baseline' emissions trading schemes that feature no cap on emissions and hand out permits for free are also possible, but not within the scope of this article. The Chinese emissions trading system, at least in its initial stage, falls into this category. For an overview of possible varieties of emissions trading, see Caney op. cit., 201.

8 A good overview is provided by World Bank, *State and Trends of Carbon Pricing* (Washington, DC: World Bank, Ecofys and Vivid Economics, 2017).

9 Aldred op. cit., 352.

10 Henry Shue, 'Subsistence emissions and luxury emissions', *Law and Policy*, 15, 1 (1993): 39–59. The distinction between these two kinds of emissions was originally introduced by Anil Agarwal and Sunita Narain, *Global Warming in an Unequal World: A Case of Environmental Colonialism* (New Delhi: Centre for Science and Environment, 1991), p. 3.

11 For a discussion of what should be the 'currency of justice' in climate change mitigation, see William F. Lamb and Julia K. Steinberger, 'Human well-being and climate change mitigation', *Wiley Interdisciplinary Reviews: Climate Change*, 8, 6 (2017):e485; Edward A. Page, *Climate Change, Justice and Future Generations* (Cheltenham: Edward Elgar, 2006), ch. 3.

12 For an introduction into the capabilities approach and the difference between capabilities and functionings, see Ingrid Robeyns, 'The capability approach' in E. N. Zalta (ed.) *The Stanford Encyclopedia of Philosophy* (Winter 2016 Edition).

13 For Nussbaum's list of capabilities, see Martha Nussbaum, *Women and Human Development. The Capabilities Approach* (New York: Cambridge University Press, 2000), pp. 78–80. The capabilities that I have in mind here are 'affiliation' and maybe also 'play'.
14 Or if they lose some, they are likely to lose less of them than less affluent people.
15 Lucas Chancel and Thomas Piketty, *Carbon and Inequality: From Kyoto to Paris. Trends in the Global Inequality of Carbon Emissions (1998–2013) & Prospects for an Equitable Adaptation Fund* (Paris School of Economics, Paris), p. 31; Oxfam, Extreme Carbon Inequality, *oxfam.org*, 2015, URL: https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/mb-extreme-carbon-inequality-021215-en.pdf, p. 4. This number includes indirect emissions that have taken place somewhere because of some actor's demand into said actor's personal emissions (or carbon footprint).
16 Oxfam op. cit., 1.
17 Chancel/Piketty op. cit., 19 & 33.
18 See Duncan K. Foley, 'The economic fundamentals of global warming' in J.M. Harris & N.R. Goodwin (eds.) *Twenty-first Century Macroeconomics. Responding to the Climate Challenge* (Cheltenham: Edward Elgar Publishing, 2009), pp. 115–126 & John Broome, *Climate Matters. Ethics in a Warming World* (New York/London: W.W. Norton & Company, 2012), Ch. 3. For the argument that such a sacrifice-free solution might not be feasible, see Rob Lawlor, 'The Absurdity of economists' Sacrifice-free solutions to climate change', *Ethics, Policy & Environment*, 19, 3 (2016): 350–365 & Aaron Maltais, 'Making our children pay for mitigation' in A. Maltais & C. McKinnon (eds.) *The Ethics of Climate Governance* (Lanham: Rowman & Littlefield, 2015), pp.91–110.
19 Broome op. cit., 46. However, it should be noted that Broome does not declare them, all things considered, morally impermissible if they are introduced under certain nonideal circumstances. See Broome op. cit., 47–48.
20 Roser/Seidel 2017, p. 225.
21 The PPP, as understood here, is different from a principle demanding that polluters should bear the full costs of their actions. It merely demands a positive correlation between burdens in solving a problem and contributions to creating the problem. Whether these burdens amount to a full internalization of the costs created is an open question.
22 Andrea Baranzini; Jeroen van den Bergh; Stefano Carattini; Richard Howarth; Emilio Padilla; and Jordi Roca, 'Carbon pricing in climate policy: Seven reasons, complementary instruments, and political economy considerations', *Wiley Interdisciplinary Reviews: Climate Change*, 8, 4 (2017): e:462, p. 3.
23 Examples of pluralistic approaches that nevertheless incorporate the PPP can be found in Simon Caney, 'Climate change and the duties of the advantaged', *Critical Review of International Social and Political Philosophy*, 13, 1 (2010b): 203–228; Edward Page, 'Climate justice and the fair distribution of atmospheric burdens: a conjunctive account', *Monist*, 94, 3 (2011b): 412–432; Dominic Roser and Christian Seidel, *Climate Justice. An Introduction* (Abingdon: Routledge, 2017), ch. 16.
24 Caney 2010b, 208–211.
25 Page 2011b, 423.
26 This observation can be also used to diffuse the worry that the *Unfair Burdens Argument* simply points to an unfairness that applies to all policies that couple the ability to do certain things with the ability to pay for them and might therefore be considered too general to speak against carbon pricing in particular. In other words: the *Unfair Burdens Argument* can be coupled with a more general critique of market-based policies in the face of economic inequalities but need not be based on it.
27 Both the APP and BPP are discussed in Roser/Seidel op. cit., 130–150 and in Page 2011b, 417–424. The APP is also discussed in Caney 2010b, 213–219 and features prominently in Darrel Moellendorf, *The Moral Challenge of Dangerous Climate Change. Values, Poverty, and Policy* (New York: Cambridge University Press, 2014). The BPP is also discussed in Dale Jamieson, *Reason in a Dark Time: Why the Struggle against Climate Change Failed and what it means for Our Future* (New York: Oxford University Press, 2014), p. 162.
28 See Bruce Headey and Mark Wooden, 'The effects of wealth and income on subjective well-being and ill-being', *Economic Record*, 80, S1 (2004): 24–33.
29 Assessing the APP is further complicated by the fact that it is not entirely clear which *ability* to bear burdens the APP should refer to in order to be as plausible as possible: the factual or a hypothetical? Moral agents should surely not get off the moral hook if they reduce their factual ability to be burdened precisely in order not to be forced to bear burdens in the process of solving a particular problem. This is true for both a monetary and a nonmonetary understanding of 'to be burdened'. Hence much speaks in favor of

basing the APP on some form of hypothetical ability to bear burdens, one that is sensitive to reductions in people's ability to bear burdens that are not under their control but insensitive to reductions within people's control. In real life, however, the lesser ability to bear burdens of less affluent people is usually not down to their own deliberate making. Poorer people have not made themselves poorer in order to count as having a lesser ability to bear burdens under the APP. It therefore seems that less affluent people should typically count as having a lesser ability to bear burdens even under this more nuanced understanding of the APP. Burdening them more would be unfair according to the APP. I thank an anonymous reviewer for alerting me to this complexity.

30 Jonathan Aldred can be understood as arguing for a premise very similar to premise 2. However, he provides a different justification for it. Aldred defends an egalitarian argument based on the notion of civic responsibilities. Faced with a common threat, people should shoulder equal sacrifices. This isn't convincing. When people have vastly different responsibilities for the creation of a threat, burdens in reacting to the threat should be unevenly distributed, for example, in the way prescribed by the PPP. The same goes for diverging benefits from creating the threat and diverging abilities to react to the threat. An equal distribution of burdens is, in this case, not a just one. Hence I deem my justification for premise 2 to be more plausible than Aldred's. See Aldred op. cit., 350–355.

31 What seems clear enough is that given the potential for catastrophe inherent in climate change, some policies will under some circumstances turn out to be both unfair and permissible. See also Caney's discussion of 'Burden Sharing Justice' and 'Harm Avoidance Justice' in Simon Caney, 'Two kinds of climate justice: Avoiding harm and sharing burdens', *Journal of Political Philosophy*, 22, 2 (2014), 125–149.

32 A good example for a sector-specific carbon tax proposal that features different prices for different emitters is the 'A Free Ride' frequent-flyer levy proposed by the New Economics Foundation. See afreeride.org. I thank an anonymous reviewer for alerting me to this proposal.

33 See Caney 2010a, 214 & Calel op. cit., 114 & Baranzini op. cit., 7.

34 Another proposal, to grant (some) individuals free permits to cover their basic needs but make everybody pay for emissions connected to anything other than people's basic needs, might also be unfair. This could still burden the more affluent less than the less affluent. For a discussion of climate change mitigation and basic needs, see Keith Hyams, 'A just response to climate change: personal carbon allowances and the normal-functioning approach', *Journal of Social Philosophy*, 40, 2 (2009): 243–244; Shue op. cit.

35 This observation is important for another reason: it lessens the worry that the atomist, isolationist approach chosen in this article misses important moral facts that could render its conclusions false. The problem about carbon pricing is that it unfairly disadvantages the less affluent compared to the more affluent. From a more holistic and integrationist perspective, this could be classified as unproblematic as long as the unfairness is balanced out by the distribution of burdens in other areas, for example, if less affluent people are typically less burdened when it comes to financing adaptation measures. But given the existing power imbalances and given the broader understanding of 'to be burdened' used in this article, this seems unlikely. A more holistic and integrationist approach to (climate) justice is therefore likely to reach a similar conclusion to the one defended in this article.